


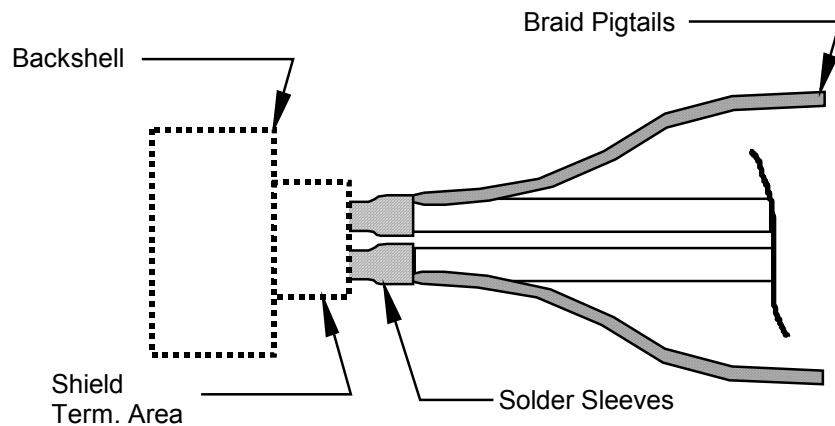
REV C	APPLICATION			REVISIONS			
	NEXT ASSEMBLY	FINAL ASSEMBLY	REV	DESCRIPTION	DATE	APPROVED	APPROVED
SH 1			A	Initial Release per DCN W2438	01/13/03	V. Wallace	
			B	Revised per DCN W2657	02/19/03	V. Wallace	R. Durall
			C	Removed GPS Connector per DCN W2800	05/20/03	V. Wallace	R. Durall
DWG. NO. 100-045242							

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF WULFSBERG ELECTRONICS, A CHELTON GROUP COMPANY, NEITHER RECEIPT NOR POSSESSION THEREOF CONFERS ANY RIGHT TO REPRODUCE OR USE, OR DISCLOSE, IN WHOLE OR IN PART, ANY SUCH INFORMATION WITHOUT WRITTEN AUTHORIZATION FROM WULFSBERG ELECTRONICS

		 Wulfsberg Electronics <i>A Chelton Group Company</i>					
APPROVALS		DATE		EFIS II CABLING AND TERMINATION PROCESS			
DRAWN R. DuRall		01/17/03					
CHECKED							
ENGINEER R. DuRall		01/17/03		SIZE A	CAGE CODE 1B7G3	DWG NO. 100-045242	REV C
ISSUED V. Wallace		01/13/03					
Typed signatures indicate approval. Handwritten signature approval of this document is on file at Wulfsberg Electronics, Prescott, Arizona.				SCALE: NONE		DO NOT SCALE DRAWING	

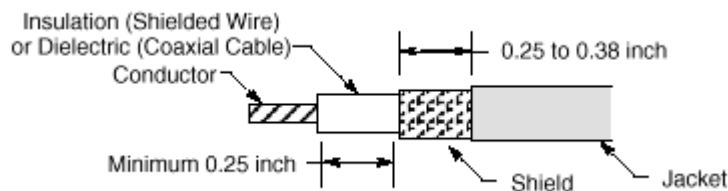
1. GENERAL

- a. Terminate all individual cable shields which are not “dead ended” using a solder sleeve (M83519/2 or equivalent) or optionally the braid pull-out method. Use the smallest solder sleeve that will fit over the cable shield and the braid pigtail.
- b. The shield pigtail may be either a wire segment or another small braid segment. Wire segments are used when the cable shield is terminated to a connector contact or a terminal lug. Braid segments are used when the cable shield terminates at a backshell or EMI spigot or split support ring used to terminate a braid sock. ZAP assemblies with multiple terminations may use either wire pigtails, braid pigtails or a combination of both.
- c. For backshell shield terminations, the individual cable shield shall be terminated at the end of the cable maintaining the minimum length of unshielded conductors with the shield pigtail installed at the back end. The solder sleeve may end up inside the backshell depending on the length of the unshielded portion of the cable.



2. Solder Sleeve Assembly

- a. Remove the outer jacket using a thermal stripper or other suitable means, exposing 0.25 to 0.38 inch of shield braid.
 - (1) When using a sharp instrument to remove jacket, score jacket lightly and bend cable to complete jacket separation. Do not cut completely through cable jacket.**CAUTION** Cutting through the cable jacket may result in damage to shield.
- b. Push the solder sleeve over the exposed shield braid so solder sleeve shall be approximately centered over the exposed shield braid.
 - (1) To avoid heat concentration which might split or otherwise damage the solder sleeve, the end of the shield ground wire insulation, if not preinstalled, should be positioned approximately even with the inner edge of the seal ring.
 - (2) Maintain the relative position of the solder sleeve, shield ground wire and shield braid during assembly.

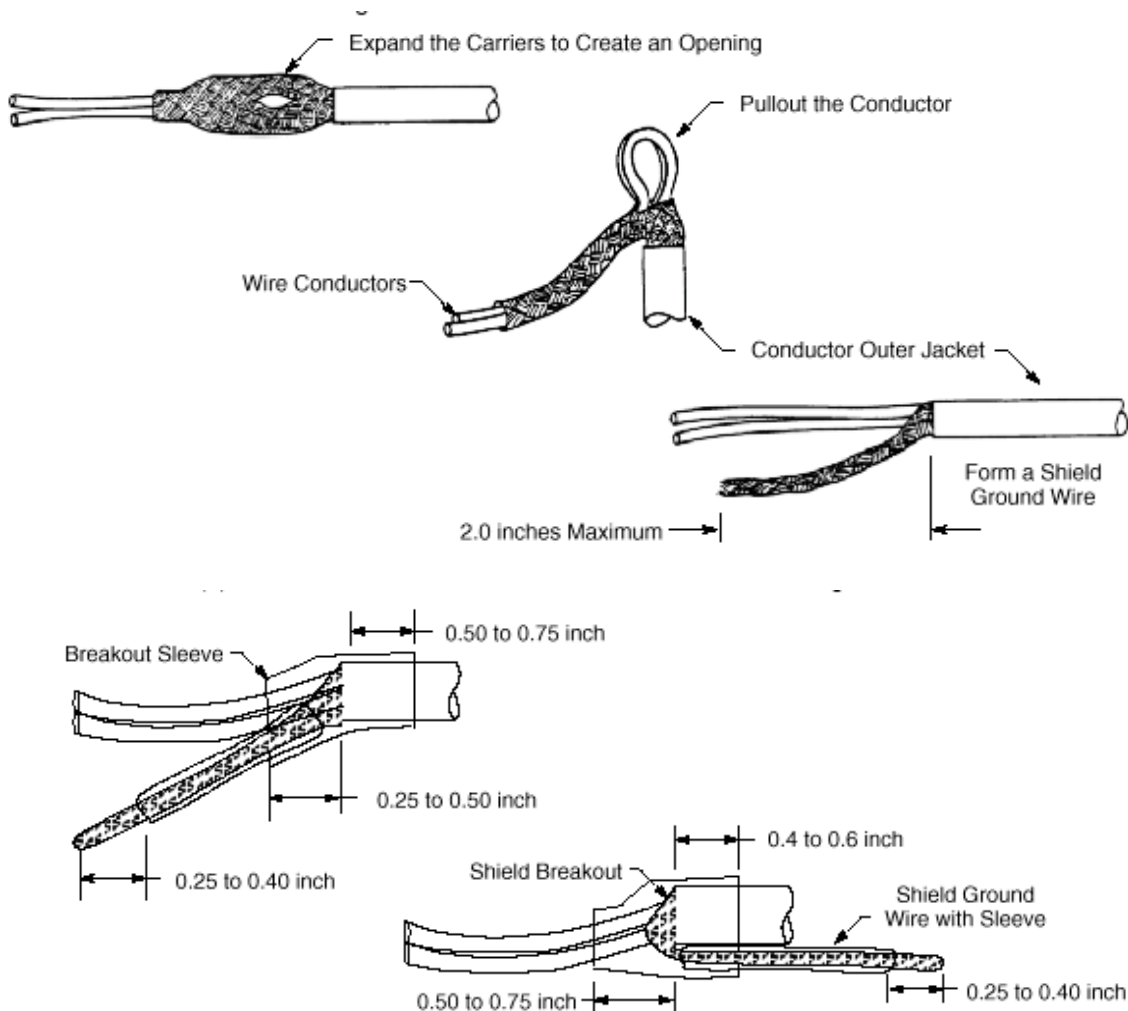


- c. Use tinned copper braid Alpha P/N 1223 (3/64 inch) or equivalent for pigtail. Lap pigtail braid or wire segment with wire shield and place solder sleeve over assembly.
- d. Shrink the solder sleeve in accordance using infrared or hot air heaters. Apply the heat uniformly, periodically rotating the solder sleeve during the heating process. Do not allow the infrared or hot air heater to touch the solder sleeve or wire during the heating process (touching of the heating guard is acceptable).
- e. Inspect for conformance to criteria for installed solder sleeves per the following:
 - (1) No appearance of the solder preform ring will remain.
 - (2) In the case of solder sleeves with indicator rings the following also applies: It is necessary that the indicator ring has completely disappeared or melted. **NOTE:** If the process continually results in less than 100 percent melting of the indicator ring there may be a problem with the process which should be corrected before further processing.
 - If infrared heating is used, the problem is usually caused by a dirty reflector.
 - If hot air is used, the sleeve may not be centered in the hot air reflector.
 - (3) The shield ground wire shall be approximately centered in the melted area.
 - (4) Preformed solder ring inserts are to melt and flow along the shield ground wire leads and shield.
 - (5) A minimum 0.125 inch fillet length is visible under a maximum power of 4X magnification along the shield ground wire lead and shield junction on at least one side of the shield ground wire. This requirement also applies to each shield ground wire of a multiple shield ground wire termination.
 - (6) Browning or darkening of the sleeve is acceptable unless this condition inhibits visibility of the solder termination.
 - (7) The materials must not be split, charred, or otherwise damaged to any extent that that would compromise the insulating integrity of the sleeve.
 - (8) Inserts are to melt and flow around the circumference of the cable between the cable jacket and the insulation sleeve to prevent solder from flowing out of the work area.
 - (9) The melted insert rings must not obstruct visual inspection of the solder joint.
 - (10) A maximum of 1/2 inch wicking up the shield ground wire (measured from the shield ground wire end of the sleeve) is allowed.

3. OPTIONAL SHIELD PULL-OUT METHOD

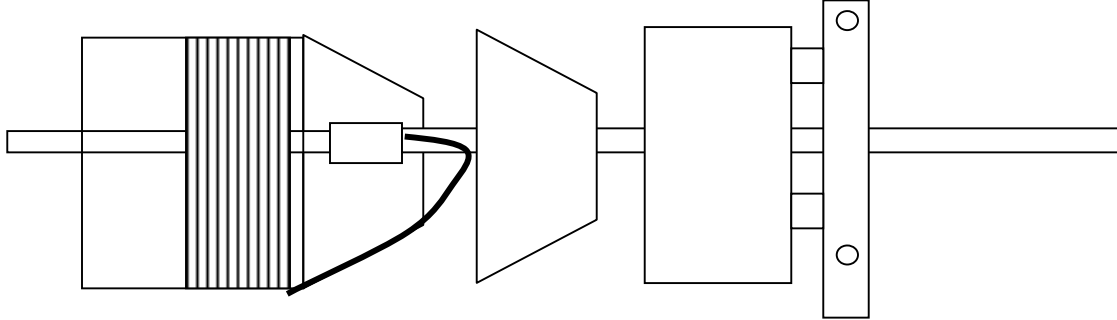
- a. Do not use this procedure for a shield that has flat conductor braid strands.
- b. Remove the cable outer jacket to the point of breakout
- c. Using a non-metallic awl or similar tool, start a small hole in the shield braid approximately 0.5 inch from end of outer jacket by spreading the shield carriers slightly.
- d. Push the shield braid back on the wire(s) to cause it to bunch.
- e. Widen the hole in the shielding by alternately pushing shield carriers back in each direction.
- f. As the hole enlarges, start bending the wire(s) slightly to allow shield carriers to be worked down over the bent wire(s) until the wire(s) can be pulled through the opening. During this operation, avoid damage to braid and conductor insulation.
 - (1) Do not overstress individual shield strands causing breakage
 - (2) Do not subject the conductors to a bend radius less than 3 times the insulation diameter.
- g. Work the bunched shielding back down the wire and straighten the shield ground wire to its full length.

- h. Cut the shield ground wire to a maximum length of 2.0 inches.
- i. Protect shield breakout area using M23053/5 sleeving.



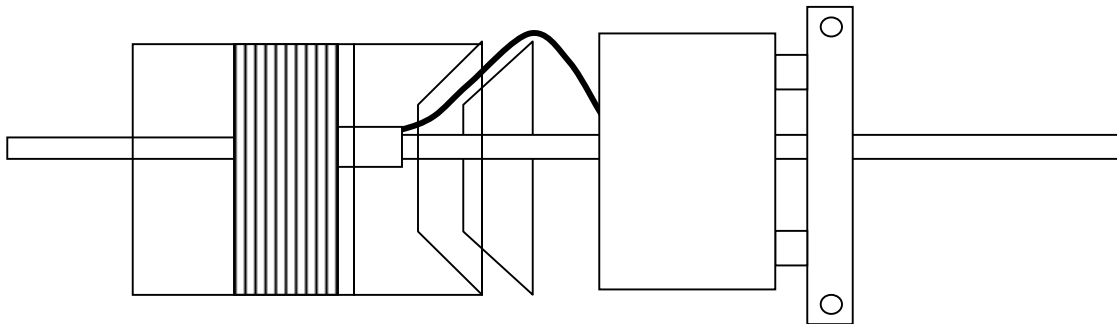
4. BACKSHELL TERMINATION (M85049/19 type)

- a. Attach backshell body to connector, properly clocking backshell and tighten backshell coupling ring slightly beyond hand tight or torque if required.
- b. Dress wires in backshell body and position cover. Do not pinch wires between backshell body and cover.
- c. Route braid pigtails back over backshell body EMI cone and fold braid pigtails evenly over the taper of the EMI cone. Trim braid pigtails to prevent braid from laying on threads. Do not let braid ends, cut from shield, fall into connector.
- d. Slide rear EMI cone over the front EMI cone, wedging the shield pigtails between the two tapered surfaces.
- e. Tighten backshell strain relief to hold braid strands securely. During the tightening operations, the shield pigtails may move slightly. This is acceptable as long as the pigtails do not lie on top of each other.



5. BACKSHELL TERMINATION (380HS008 type)

- a. Attach backshell body to connector, properly clocking backshell and tighten backshell coupling ring slightly beyond hand tight or torque if required.
- b. Dress wires in backshell body and position cover. Do not pinch wires between backshell body and cover.
- c. Slide rear EMI cone over the front EMI cone, wedging the shield pigtails evenly between the two tapered surfaces.
- d. Route shield pigtails down onto the harness 0.25 inch min past the EMI cone and tie to the harness. Trim pigtails a maximum of 0.25 inch past tie.
- e. Tighten backshell strain relief to hold braid strands securely. During the tightening operations, the shield pigtails may move slightly. This is acceptable as long as the pigtails do not lie on top of each other.



6. AHRS Connection

- a. AHRS cable connection consists of the following:
 - Positronics DB-15 female crimp connector
 - Positronics crimp sockets
 - Positronics EMI/RFI straight backshell
- b. Terminate shielded cable per step 3 or 4. Ensure exposed wire is not more than two inches from shield.
- c. Run shield pigtail to backshell termination screw as shown below.
- d. Wrap all wires with anti-chaff tape or equivalent at backshell clamp and secure wires.
- e. Install backshell cover and secure with four screws.

